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DATE: Saturday, January 19, 2008

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		<i>DB=EPAB; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L9	WO-2005016563-A1.did.	1
<input type="checkbox"/>	L8	WO-2005016563-A1.did.	1
		<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L7	L6 with wafer	6
<input type="checkbox"/>	L6	L5 with ozone	6
<input type="checkbox"/>	L5	I2 with (hf or (hydrofluoric acid))	40
<input type="checkbox"/>	L4	L3 with (hf or (hydrofluoric acid))	0
<input type="checkbox"/>	L3	L2 with spinning	8
<input type="checkbox"/>	L2	thinning with wafer	4418
		<i>DB=USPT; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L1	6869487.pn.	1

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Search Results - Record(s) 1 through 6 of 6 returned.

☐ 1. Document ID: US 20070190746 A1

L7: Entry 1 of 6

File: PGPB

Aug 16, 2007

PGPUB-DOCUMENT-NUMBER: 20070190746

PGPUB-FILING-TYPE:

DOCUMENT-IDENTIFIER: US 20070190746 A1

TITLE: SUBSTRATE PROCESSING APPARATUS

PUBLICATION-DATE: August 16, 2007

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Ito; Masataka	Kanagawa		JP
Yamagata; Kenji	Kanagawa		JP
Kakizaki; Yasuo	Kanagawa		JP
Takanashi; Kazuhito	Kanagawa		JP
Miyabayashi; Hiroshi	Kanagawa		JP
Moriwaki; Ryuji	Kanagawa		JP
Tsuboi; Takashi	Kanagawa		JP

US-CL-CURRENT: 438/455; 257/E21.219, 257/E21.246, 257/E21.283, 257/E21.309,
257/E21.525, 257/E21.53, 257/E21.568, 257/E21.57

ABSTRACT:

An SOI substrate which has a thick SOI layer is first prepared. Then, the SOI layer is thinned to a target film thickness using as a unit a predetermined thickness not more than that of one lattice. This thinning is performed by repeating a unit thinning step which includes an oxidation step of oxidizing the surface of the SOI layer by the predetermined thickness not more than that of one lattice and a removal step of selectively removing silicon oxide formed by the oxidation. The SOI layer of the SOI substrate is chemically etched by supplying a chemical solution to the SOI layer, and the film thickness of the etched SOI layer is measured. When the measured film thickness of the SOI layer has a predetermined value, a process of chemically etching the SOI layer ends.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw Da
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☐ 2. Document ID: US 20040259328 A1

L7: Entry 2 of 6

File: PGPB

Dec 23, 2004

PGPUB-DOCUMENT-NUMBER: 20040259328
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040259328 A1

TITLE: Substrate manufacturing method and substrate processing apparatus

PUBLICATION-DATE: December 23, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Ito, Masataka	Kanagawa		JP
Yamagata, Kenji	Kanagawa		JP
Kakizaki, Yasuo	Kanagawa		JP
Takanashi, Kazuhito	Kanagawa		JP
Miyabayashi, Hiroshi	Kanagawa		JP
Moriwaki, Ryuji	Kanagawa		JP
Tsuboi, Takashi	Kanagawa		JP

US-CL-CURRENT: 438/459; 257/E21.219, 257/E21.246, 257/E21.283, 257/E21.309,
257/E21.525, 257/E21.53, 257/E21.568, 257/E21.57

ABSTRACT:

An SOI substrate which has a thick SOI layer is first prepared. Then, the SOI layer is thinned to a target film thickness using as a unit a predetermined thickness not more than that of one lattice. This thinning is performed by repeating a unit thinning step which includes an oxidation step of oxidizing the surface of the SOI layer by the predetermined thickness not more than that of one lattice and a removal step of selectively removing silicon oxide formed by the oxidation. The SOI layer of the SOI substrate is chemically etched by supplying a chemical solution to the SOI layer, and the film thickness of the etched SOI layer is measured. When the measured film thickness of the SOI layer has a predetermined value, a process of chemically etching the SOI layer ends.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RWC	Draw De
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☐ 3. Document ID: US 20040020513 A1

L7: Entry 3 of 6

File: PGPB

Feb 5, 2004

PGPUB-DOCUMENT-NUMBER: 20040020513
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040020513 A1

TITLE: Methods of thinning a silicon wafer using HF and ozone

PUBLICATION-DATE: February 5, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Bergman, Eric J.	Kalispell	MT	US

US-CL-CURRENT: 134/2; 134/30, 134/31, 134/902, 257/E21.218, 257/E23.054

ABSTRACT:

A method of thinning a silicon wafer in a controllable cost-effective manner with minimal chemical consumption. The wafer is placed into a process chamber, after which ozone gas and HF vapor, are delivered into the process chamber to react with a silicon surface of the wafer. The ozone and HF vapor may be delivered sequentially, or may be mixed with one another before entering the process chamber. The ozone oxidizes the silicon surface of the wafer, while the HF vapor etches the oxidized silicon away from the wafer. The etched oxidized silicon is then removed from the process chamber. As a result, the wafer is thinned, which aids in preventing heat build-up in the wafer, and also makes the wafer easier to handle and cheaper to package. In alternative embodiments, HF may be delivered into the process chamber as an anhydrous gas or in aqueous form.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RWMC	Draw. De
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☐ 4. Document ID: US 7256104 B2

L7: Entry 4 of 6

File: USPT

Aug 14, 2007

US-PAT-NO: 7256104

DOCUMENT-IDENTIFIER: US 7256104 B2

TITLE: Substrate manufacturing method and substrate processing apparatus

DATE-ISSUED: August 14, 2007

PRIOR-PUBLICATION:

DOC-ID	DATE
US 20040259328 A1	December 23, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ito; Masataka	Kanagawa			JP
Yamagata; Kenji	Kanagawa			JP
Kakizaki; Yasuo	Kanagawa			JP
Takanashi; Kazuhito	Kanagawa			JP
Miyabayashi; Hiroshi	Kanagawa			JP
Moriwaki; Ryuji	Kanagawa			JP
Tsuboi; Takashi	Kanagawa			JP

US-CL-CURRENT: 438/459; 257/E21.219, 257/E21.246, 257/E21.283, 257/E21.309,
257/E21.525, 257/E21.53, 257/E21.567, 257/E21.568, 257/E21.569, 257/E21.57, 438/455

ABSTRACT:

An SOI substrate which has a thick SOI layer is first prepared. Then, the SOI layer is thinned to a target film thickness using as a unit a predetermined thickness not more than that of one lattice. This thinning is performed by repeating a unit thinning step which includes an oxidation step of oxidizing the surface of the SOI layer by the predetermined thickness not more than that of one lattice and a removal step of selectively removing silicon oxide formed by the oxidation. The SOI layer of the SOI substrate is chemically etched by supplying a chemical solution to the SOI layer, and the film thickness of the etched SOI layer is measured. When the measured film thickness of the SOI layer has a predetermined value, a process of chemically etching the SOI layer ends.

17 Claims, 30 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 21

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw. De
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☐ 5. Document ID: WO 2005016563 A1

L7: Entry 5 of 6

File: EPAB

Feb 24, 2005

PUB-NO: WO2005016563A1

DOCUMENT-IDENTIFIER: WO 2005016563 A1

TITLE: METHODS OF THINNING A SILICON WAFER USING HF AND OZONE

PUBN-DATE: February 24, 2005

INVENTOR-INFORMATION:

NAME

COUNTRY

BERGMAN, ERIC J

US

US-CL-CURRENT: 257/E21.218

INT-CL (IPC): B08B 3/00

EUR-CL (EPC): H01L021/00

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw. De
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☐ 6. Document ID: WO 2005016563 A1

L7: Entry 6 of 6

File: DWPI

Feb 24, 2005

DERWENT-ACC-NO: 2005-213954

DERWENT-WEEK: 200661

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TITLE: Thinning silicon wafer comprises delivering ozone gas into process chamber to oxidize layer of silicon on wafer, and etching oxidized silicon layer with hydrofluoric vapor to decrease thickness of wafer

INVENTOR: BERGMAN, E J

PRIORITY-DATA: 2003US-0631376 (July 30, 2003)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 2005016563 A1	February 24, 2005	E	035	B08B003/00

INT-CL (IPC): B08B 3/00

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw D
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Term	Documents
WAFER	497278
WAFERS	166558
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